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Suggested Program and Instructions for Idaho 4-H Dairy Clubs

Coöperative Extension Service in Agriculture and Home Economics of the State of Idaho, University of Idaho Extension Division and U.S. Department of Agriculture Coöperating

DAIRY SECTION

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Suggested Program and Instructions for Idaho 4-H Dairy Clubs

by

D. L. Fourt, Extension Dairyman

4-H Dairy Clubs

Object

The object of the dairy club is to organize boys and girls in the same community between the ages of 10 and 20 years inclusive, into groups for the purpose of developing dairymen by demonstrating approved methods of dairying. This includes feeding, management, judging, fitting, exhibiting, record keeping, and training members in leadership; at the same time developing high quality dairy cattle in the community.

Requirements

Each dairy club member is required to own either one purebred heifer or one or more grade heifers. In Division I, the animals are to be heifer calves under one year of age; in Division II, they are to be yearling heifers one year old and under two years and in Division III, they are to be cows two years or over.

In Idaho many clubs are combinations.

Each club member must do all the work in connection with the feeding and management of his heifer and exhibit her at a local, county, or district fair.

An accurate record and a story of the year's work must be submitted to the extension agent at the end of the year. Each club member should attend all regular club meetings and take an active part in judging, fitting and showing, and giving demonstrations.

Standard Clubs

There are nine requirements for a standard club. The first three are met when the club is organized and the enrollment is sent to the college.

The requirements are:

1. Five or more members to take the same project
2. Officers are to be elected from among club members
3. A local leader to be selected
4. A definite program of work to be outlined
5. At least six regular meetings to be held during the club year
6. A local exhibit to be held annually
7. A demonstration team which shall give a public demonstration in the community
8. A judging team to be chosen by competition among the members
9. An Achievement Day to be held during the club year.

Organization

The dairy club may be organized at any time but preferably in the late winter or spring. Enrollment blanks and instructions for

organizing the club may be obtained from the county or district extension agent. After organization, the local leader will be provided with instructions for each member, including feed record sheets, and record books.

The feed record sheets are for the use of the club members in keeping a complete record of all feeds; kind, amount, value, etc., for their animals. A simple, yet accurate method of keeping records is for each member to enter each week on his feed record sheet, the amount of milk, hay, grain, etc., fed during the week, and transfer this information to the record book once a month. The first pages of the record book should be filled in as soon as the member starts his work. The remainder of the book is to be filled in at the close of the year's work by taking final figures from the feed record sheet and adding other necessary information.

The Local Leader

The local leader determines to a large extent the success of a dairy calf club. He must be interested in boys and girls and interested in developing the dairy industry in his community.

The local leader is the club's representative to the University Extension Division and the advisor of the club members. He should attend all meetings and take charge during the instruction period. He should advise the club members relative to their individual dairy problems, guide in planning the details of club operation, and examine the record books at each meeting to see that all books are kept up to date.

The following reference library of dairy bulletins will be of assistance to club leaders:

"Suggestions for Profitable Dairying," Idaho Extension Bulletin No. 72.

"Care of the Dairy Calf," U.S.D.A. Leaflet No. 20.

"Feeding and Management of Dairy Calves," U.S.D.A Farmers' Bulletin No. 1336.

"Judging Dairy Cattle," U.S.D.A. Miscellaneous Circular No. 99.

"Cattle Lice and How to Eradicate Them," U.S.D.A. Farmers' Bulletin No. 909.

"Breeds of Dairy Cattle," U.S.D.A. Farmers' Bulletin No. 893.

"Raising the Dairy Heifer," U.S.D.A. Leaflet No. 14.

"Care of the Cow at Calving Time," U.S.D.A. Leaflet No. 10.

"Feeding Dairy Cows in Summer," U.S.D.A. Leaflet No. 7.

"Feeding Dairy Cows," U.S.D.A. Farmers' Bulletin No. 1626.

"Care and Management of Dairy Cows," U.S.D.A. Farmers' Bulletin No. 1478.

"Factory Tests for Dairy Products," Idaho Experiment Station Circular No. 57.

"Dairy Herd Improvement," U.S.D.A. Farmers' Bulletin No. 1532.

"Dairy Herd Improvement Assn.," U.S.D.A. Farmers' Bulletin No. 1604.

"Improved Sanitation in Milk Production," U.S.D.A. Leaflet No. 3.

"Production of Clean Milk," U.S.D.A. Farmers' Bulletin No. 602.

Suggestions

Soon after the club is organized the local leader and members decide on a program of work for the year. This adds interest as the members will know what to look forward to and will have time to plan any part which they are to take in the meetings. As soon as the program is prepared, a copy should be sent to the extension agent. This will entitle the club to a National 4-H Club Charter. In general, the outline of the program of work should include the dates and places of meetings, shows and fairs at which the calves will be exhibited, and a brief statement relative to phases of the work and subject matter which will be studied.

The information in this bulletin is arranged for the three divisions of calf club work. In instances where a club is made up of a combination of members in each division, the local leader should adapt the subject matter to conditions, and in some instances make individual assignments to members in different divisions.

At the close of the year, an Achievement Day is held to give public recognition to all members who have completed their work and to familiarize the public with the accomplishments of the club members.

Suggested Programs for Meetings of 4-H Dairy Clubs

Local club leaders and clubs are expected to adapt this outline to local conditions. It may be necessary to devote two or more meetings to some subjects.

Data on the feed record sheets and other facts pertaining to the project should be transferred to the record books once a month and record books kept up to date and brought to each meeting for examination by the local leader.

First Division

First Meeting

Organization of the Club. (Idaho 4-H Club Manual).

The local leader should preside at the first meeting until the regular officers are elected.

I. Business Meeting:
   1. Explanation of the requirements of a standard club and the duties of club officers and members by the local leader or extension agent.
   2. Election of club officers from the membership of the club.
   3. Discussion and selection of a name for the club.
   4. Adoption of constitution. (Idaho 4-H Club Manual).
   5. Decision upon place, hour, and date of meeting.
   6. Appointment of committees.
   7. Meeting turned over to the local leader for the instruction period.

II. Instruction:
   1. Local leader gives brief outline of main club events of year, such as:

a. Six or more regular meetings.
b. Exhibiting at spring breed shows and fall fairs.
c. Judging teams competing with other clubs.
d. Fitting and showing contests.
e. Demonstrations given before public audiences.
f. Club tour.

2. Distribution of club literature and record books.
3. Discussion relative to securing calves. (See page 11).
4. Discussion of how records are to be kept.
5. Outline program for next meeting and make assignments. (Assign topics outlined in next meeting to individual members.)
6. Recreation period.

All members should learn the national 4-H Club Pledge before the next club meeting, and answer roll call by giving the pledge. (Idaho 4-H Club Manual.)

Second Meeting

I. Business meeting—Club president in charge. (Idaho 4-H Club Manual.)
II. Instruction—Local leader in charge.
1. Discussion—Feeding and care of the dairy calf from birth to one year of age.
a. Whole milk period. (Page 12).
b. Overfeeding on whole milk. (Page 13).
c. Skim milk period. (Page 14).

References:
"Suggestions for Profitable Dairying," page 10, Idaho Extension Bulletin No. 72.
"Care of the Dairy Calf," U.S.D.A. Leaflet No. 20.
"Feeding and Management of Dairy Calves," Farmers' Bulletin No. 1336, page 15.

Third Meeting

I. Business Meeting—Club president in charge. (Idaho 4-H Club Manual.)
II. Instruction—Local leader in charge.
a. Study of dairy cattle score card. (Page 30).
b. Judging demonstration and judging practice.
c. Explanation of giving reasons for placings. (Page 34).
d. Discussion of descriptive terms referring to dairy cattle. (Page 35).

References
"Judging Dairy Cattle," U.S.D.A. Miscellaneous Circular No. 99.

Fourth Meeting

I. Business meeting—Club president in charge. (Idaho 4-H Club Manual.)
II. Instruction—Local leader in charge.
1. Diseases and pests.
a. White scours. (Page 16).

b. Scours. (Page 16).
c. Ringworm. (Page 17).
d. Lice. (Page 17).
e. Dehorning. (Page 18).

References

"Cattle Lice and How to Eradicate Them," Farmers' Bulletin No. 909.

"Dehorning and Castration," Farmers' Bulletin No. 1600.

Fifth Meeting

I. Business meeting—Club president in charge. (Idaho 4-H Club Manual.)
II. Instruction—Local leader in charge.
a. Raising calves where skim milk is not available. (Page 15).
b. Quarters and stanchions for calves. (Page 16).
c. Handling the dairy heifer from six months to one year. (Page 19).
d. Breeds of dairy cattle. (Page 36).
e. Discussion of fitting heifers for show. (Page 22).
f. Practice in showmanship or practice on some demonstration.

References:

"Breeds of Dairy Cattle," Farmers Bulletin No. 893.

Sixth Meeting

I. Business meeting—Club president in charge. (Idaho 4-H Club Manual.)
II. Instruction—Local leader in charge.
1. Club tour.
a. Visit projects of each member, observe calves and method of management and practice showing and judging. Each member bring record book on tour, completed up to date.

Seventh Meeting

I. Business meeting—Club president in charge. (Idaho 4-H Club Manual.)
II. Instruction—Local leader in charge.
a. Dairy demonstration.
b. Judging practice.
c. Demonstration in fitting and showing.
d. Discuss Achievement Day and make arrangements to attend.
e. Inspection of record books preparatory to sending to extension agent.

Eighth Meeting

Achievement Day. (Idaho 4-H Club Manual.)

Second Division

Note: Local leader appoint successful members of previous year to take charge.

First Meeting

Organization of the club.

I. Business meeting.

II. Instruction.

a. Discussion regarding calves. (See First Division)

Second Meeting

I. Business meeting—Club president in charge. (Idaho 4-H Club Manual.)

II. Instruction—Local leader in charge.

1. Care of the club heifer from one to two years of age.
   a. Feeding in summer. (Page 19).
   b. Feeding in winter. (Page 19).
   c. Age to breed heifers. (Page 19).
   d. Care of the heifer before calving. (Page 20).

References:

"Suggestions for Profitable Dairying," Idaho Extension Bulletin No.72.

"Raising the Dairy Heifer," U.S.D.A. Leaflet No. 14.

"Care of the Dairy Cow at Calving Time," U.S.D.A. Leaflet No. 10.

Third Meeting

I. Business meeting—Club president in charge. (Idaho 4-H Club Manual.)

II. Instruction—Local leader in charge.

1. Judging Dairy Cattle. (See Third Meeting, First Division, page 26).

Fourth Meeting

I. Business meeting—Club president in charge. (Idaho 4-H Club Manual.)

II. Instruction—Local leader in charge.

1. Fitting and Showing. (See Fourth Meeting, First Division, page 22).

Fifth Meeting

I. Business meeting—Club president in charge. (Idaho 4-H Club Manual.)

II. Instruction—Local leader in charge.

1. Club tour.
   a. Visit projects. (Each member have record book up to date.)
   b. Judging practice.
   c. Practice in showing a dairy animal.
   d. Inspection of record books preparatory to sending to extension agent.

Sixth Meeting

I. Business meeting—Club president in charge. (Idaho 4-H Club Manual.)
II. Instruction—Local leader in charge.
  a. Demonstration.
  b. Judging practice.
  c. Prepare for Achievement Day.

Seventh Meeting

I. Business meeting—Club president in charge. (Idaho 4-H Club Manual.)
II. Instruction—Local leader in charge.
  1. Achievement Day.

Third Division

First Meeting

Organization of the Club.
I. Business meeting.
II. Instruction.
III. Discussion regarding calves.
  (See First Division.)

Second Meeting

I. Business meeting—Club president in charge. (Idaho 4-H Club Manual.)
II. Instruction—Local leader in charge.
  1. Feeding the Producing Cow.
    a. Feeding before freshening. (Page 22).
    b. Care of cow at calving time. (Page 20).
    c. Feeding and care during the milking period. (Page 20).
    d. Dry rest period.

References:

"Care of the Cow at Calving Time," U.S.D.A. Leaflet No. 10.
"Feeding Dairy Cows in Summer," U.S.D.A. Leaflet No. 7.
"Feeding Dairy Cows," Farmers' Bulletin No. 1626.
"Care and Management of Dairy Cows," Farmers' Bulletin No. 1470.
"Suggestions for Profitable Dairying," Idaho Extension Bulletin No. 72.

Third Meeting

I. Business meeting—Club president in charge. (Idaho 4-H Club Manual.)
II. Instruction—Local leader in charge.
  a. Producing clean milk. (Page 37).
  b. Discussion of records and record keeping. (Page 36).

Fourth Meeting

I. Business meeting—Club president in charge. (Idaho 4-H Club Manual.)
II. Instruction—Local leader in charge.

1. Club tour.
   a. Visit projects.
   b. Judging practice.
   c. Practice in showing a dairy animal.

Fifth Meeting

I. Business meeting—Club president in charge. (Idaho 4-H Club Manual.)
II. Instruction—Local leader in charge.
   1. Judging Dairy Cattle. (See Third Meeting. First Division, page 26).

Sixth Meeting

I. Business meeting—Club president in charge. (Idaho 4-H Club Manual.)
II. Instruction—Local leader in charge.
   1. Fitting and Showing. (See Fourth Meeting, First Division, page 22).

Seventh Meeting

I. Business meeting—Club president in charge. (Idaho 4-H Club Manual.)
II. Instruction—Local leader in charge.
   a. Judging dairy cattle.
   b. Dairy demonstration.
   c. Inspection of record books preparatory to sending to extension agent.

References:

"Suggestions for Profitable Dairying," Idaho Extension Bulletin No. 72.
"Factory Tests for Dairy Products," Idaho Experiment Station Circular No. 57.
"Dairy Farming for Beginners," Farmers' Bulletin No. 1610.
"Purebred Dairy Sires," U.S.D.A. Leaflet No. 16.
"Improving Dairy Herds," U.S.D.A. Leaflet No. 19.
"Care and Management of Dairy Bulls," Farmers' Bulletin No. 1412.
"Dairy Herd Improvement Association," Farmers' Bulletin No. 1604.
"Dairy Herd Improvement", Farmers' Bulletin No. 1532.

Eighth Meeting

I. Business meeting—Club president in charge. (Idaho 4-H Club Manual.)
II. Instruction—Local leader in charge.
   1. Achievement Day.

Suggestions for Advanced 4-H Club Members:

A. Demonstration on pasture management.
B. Demonstration on record keeping of a herd.
C. Demonstration on feeding for economical production.

Selecting the Breed and Securing the Calves

It is desirable that all members of a club have calves of the same breed. This arouses keener competition among the members, tends to standardize the breed in the community, and makes possible the selection of a local leader who has greater interest and knowledge due to his experience in handling the breed selected by the club. If the breed selected is predominant in the community, it gives greater opportunity for club members to sell and buy animals and affords them an opportunity to breed their heifers to better bulls.

The following suggestions are offered relative to securing suitable calves:

Age of Heifers to Purchase

The age of heifers most desirable to purchase for club work depends upon the age of the club member and the amount of money he has available. Quickest returns on the investment will be derived from bred yearlings and the cost of feed to freshening age will be less. However, the purchase price of bred yearlings will be much higher than for calves. It is easier to determine the quality of bred yearlings than of calves as calves may change in type more rapidly than yearlings. Quality should not be sacrificed for age. It is preferable to buy a good calf than to buy a poor yearling at the same price.

There is less danger of getting infectious diseases in calves than in bred yearlings. The younger club members especially should secure calves rather than yearlings.

Older members often prefer to start with a yearling, or bred heifer as quicker returns are received on the investment.

Since the size and age of heifers often affect the winnings in the show ring, club members should be familiar with the dates upon which the ages of animals in different classes are based. The ages for showing in the open classes of Idaho fairs are based on August and February 1, of the current year.

1. Junior calf is an animal born between February 1, and August 1, of the current year.
2. Senior calf is an animal born between August 1, of the previous year and February 1, of current year.
3. Junior yearling is an animal born between February 1, and August 1, of previous year.
4. Senior yearling is an animal born between August 1, two years previous, and February 1, of previous year.
5. August 1, is the base date used to determine the class in which animals two years old or over are shown.

Grades or Purebreds

It is usually advisable for the first year club member to select two grade calves unless his father is a breeder of registered cattle, and is willing to assist in securing a superior animal.

If the member does not have the money to purchase the calves, he may borrow it from his father or the bank. If the calves thrive

the first year, it may be possible to sell one the second year and pay off the original cost of the two calves. If the member proves that he is interested in the calf club project and desires to continue, he may sell both grades and secure a registered calf for the second year.

Ideal Type Holstein-Friesian Cow
Courtesy Extension Service, Holstein-Friesian Assn. of America.

This plan provides a means for the member to actually pay for his calf; it provides security with which to borrow money, since if one calf should die, there is one left; it offers two opportunities for the member to have a good calf, since all calves do not develop satisfactorily and the member may select the better calf; it gives an income the first year and indicates the value of developing good heifers and gives an idea of values.

Buy Calves Locally

It is advisable to buy satisfactory calves locally, whenever possible to do so. Club members should make their own selection with the advice of the local leader.

Inferior calves should not be secured for club members. Success in calf club work is greatly affected by the quality of calves. Club members cannot be proud of a runty, poor-type calf and if they lose pride in the calf they lose interest in club work. Further development of club members is certainly worth the effort of securing calves in which members can take pride and look forward to the time when the heifers will be good-type, high-producing cows.

Feeding and Care of the Calf from Birth to Six Months

It is a common practice to let the new born calf remain with its mother from one to three days to insure its getting the first or colostrum milk. This contains laxative properties essential in starting the digestive system functioning properly, and is somewhat of a protection against some calf diseases..

When the calf is first separated from the cow let it go without milk for 12 to 18 hours. It will then be hungry and will learn to drink much easier. Use about three pounds of milk fresh from its mother in teaching a calf to drink. Back the calf into a corner, straddle its neck, holding the milk pail in one hand and with

the other hand place two fingers in the calf's mouth. While it is sucking the fingers, lower its head gradually into the pail until the muzzle is in the milk. After repeating this two or three times the calf will learn to drink of its own accord.

Ideal Type Holstein-Friesian Bull
Courtesy Extension Service, Holstein-Friesian Assn. of America.

Whole Milk Period

All milk should be fed at about the temperature that it comes from the cow, as feeding milk too much different in temperature, especially cold, often causes sickness.

It is best to start feeding the young calf six to eight pounds of milk daily in three feeds. After a week or 10 days, two feeds a day are sufficient.

Weigh or measure the amount of milk fed. Roughly, one pint weighs one pound. It is essential to know exactly the amount being fed in order not to overfeed. Changes in amounts should be made gradually. Clean pails, clean, sweet milk, and regularity in feeding are necessary for the best results, especially during the first few weeks of the calf's life. Pails should be washed and scalded after each feeding.

The calf should receive whole milk for the first two or three weeks, and preferably its mother's milk for the first four or five days as the colostrum milk is essential. After a few days, milk from the herd will give satisfactory results. However, milk from extremely high testing cows or from cows far advanced in the lactation period should not be given the young calf.

The amount of milk may be gradually increased at the rate of 0.5 to 1 pound daily, depending upon the condition of the calf. It is not necessary at any time to feed more than 10 to 12 pounds of whole milk daily in case of the large breeds, and 6 to 8 pounds daily in case of the small breeds, to secure good growth.

Overfeeding on Whole Milk

Too large an allowance of whole milk is not economical, and often causes indigestion and scours which give the calf a set-back. It is never advisable to feed whole milk longer than seven weeks and preferably only four. Feeding whole milk for a long period gives the calf a beefy appearance, indicated by heavy throat and shoulders.

Club members who are anxious to develop a winning calf too often overfeed on whole milk and continue to feed whole milk for

several weeks or months, resulting in a fat, beefy appearing calf, with a heavy neck and shoulders. Such calves usually do not win in the show ring.

Skim Milk Period

In case of strong calves, the change from whole milk to skim milk may be started when the calf is two or three weeks old. This varies from two to four weeks with different dairymen. The change is made by substituting one pound of skim milk for one pound of whole milk each feed until the calf is entirely on skim milk. The skim milk may be gradually increased until the calf is receiving between

Ideal Type Guernsey Cow
Courtesy American Guernsey Cattle Club.

10 and 12 pounds daily at the end of the fifth week, depending upon the breed, size, and condition of the calf. If there is plenty of skim milk available, it is well to feed it until the calf is about six months old.

The calf will consume 16 or 18 pounds of skim milk daily when it is three months old. It is usually not economical to feed more than 20 pounds at any time. Overfeeding on skim milk causes calves to be potbellied and unbalanced in type.

Grain Feeding

A calf should start to eat hay and grain when it is two or three weeks old. A good way to start the calf eating grain is to put a handful of ground barley or corn into its mouth a few times just after feeding milk and it will soon learn to eat. Grain should always be fed dry and not mixed with milk. The calf should be eating

grain and hay when entirely on the skim milk. Water should be available at all times but not given immediately after feeding milk. A milky taste remaining in the calves' mouths immediately after drinking milk may cause some calves to gorge themselves on water if permitted to do so.

The following grain mixture is recommended: Three parts cracked corn or rolled or ground barley, three parts rolled or ground oats and one part bran.

Grain should be fed in a small box or pail so that it will not be soiled by droppings of the calf as soiled grain often causes digestive troubles. The amount of grain can be gradually increased to two

Ideal Type Guernsey Bull
Courtesy American Guernsey Cattle Club.

pounds daily. Where economy is desired in growing calves, two pounds of grain daily (fed with alfalfa hay), skim milk, and pasture, should give normal growth. If it is desirable to push its growth more rapidly, or if more emphasis is placed on show condition of the calf than on economy in feeding, as high as three to six pounds may be fed, depending upon the age of the calf.

Raising Calves Where Skim Milk is Not Available

If skim milk is not available feed whole milk for two weeks and during the third week change to reconstituted skim milk or sweet buttermilk and grain. Reconstituted skim milk or buttermilk is prepared by dissolving one pound of powdered skim milk or powdered sweet buttermilk in nine pounds of warm water. During the sixth week, change from the reconstituted skim milk to a dry mixture

of grain and powdered skim milk. After the sixth week, a dry mixture, composed of two parts of grain and one part of powdered skim milk, fed with alfalfa hay and water, will develop calves satisfactorily. The dry mixture should be fed at the rate of four pounds a day for Holsteins and three pounds a day for Jerseys and Guernseys.

Pasture

Calves born in the fall or early winter may be turned on pasture in the spring, but should also receive two pounds of grain daily. However, if the heifer is to be exhibited in the fall she will require extra care and feed.

Quarters and Stanchions for Calves

It is desirable to keep calves in separate pens during the first two months. Pens should always be dry and well bedded. Calves should be fed in stanchions as it is impossible to feed them properly unless fastened and separated. Feeding grain in stanchions immediately after feeding milk assists in preventing calves from sucking one another's ears.

Calf Stanchions

A simple calf stanchion can be made from scrap lumber in a little time and with small expense. The accompanying picture will be of assistance in making calf stanchions. Calves thrive better if given exercise and sunlight during the day.

Common Diseases and Pests

Scours

When a calf takes the scours, first separate it from the others, then locate and remove the cause.

The causes frequently are:

a. Irregular feeding
b. Overfeeding
c. Sudden change in feed, or in amounts of feed, or in the temperature of milk
d. Fermented feed
e. Sour milk
f. Feeding in unscalded milk pails or dirty feed boxes
g. Damp or dirty stables.

A recommended treatment is to reduce the feed one-half. Give one to three tablespoonsful of castor oil and follow in a few hours with three tablespoonsful of lime water in milk. Another good remedy for scours is a mixture of one part salol and two parts subnitrate of bismuth. Give one-fourth to one teaspoonful two or three times daily.

White Scours

White scours is an infectious germ disease which usually results in death to the calf. The symptoms are white, foul smelling droppings; the calf becomes dull, loses its appetite, and usually dies in three or four days.

Prevention is the best remedy and cleanliness is an important factor in prevention. When the calf is first born, it is a good practice to disinfect the navel with iodine and apply drying powder to prevent infection. All stalls which have contained calves with white scours should be thoroughly cleaned and disinfected and young calves kept out of them for some time.

Lice

Lice will cause a calf to become unthrifty and will hinder proper growth and development. They may be suspected when calves fre-

Ideal Type Jersey Cow
Courtesy of American Jersey Cattle Club.

quently rub their necks or shoulders against posts and trees or lick themselves.

Lice can be killed in the summer by applying a solution composed of one pint of coal tar dip in four gallons of water. A second application will be necessary in ten days. Commercial remedies are satisfactory in the winter.

Ringworm

Ringworm is a skin disease which appears as round patches on the skin around the eyes and muzzle and often spreads over the head and neck. The hair soons falls out of the affected parts and a scaly gray crust forms.

Treatment consists in removing the crust each day, washing with soap and water, and painting the spots with tincture of iodine. Pens should be cleaned and disinfected to prevent spread of the disease.

It is usually advisable to vaccinate yearling heifers for Blackleg and Hemorrhagic Septicemia, especially in sections where these diseases are common.

Prevention of Horns

The growth of horns may be prevented by treatment with caustic potash or caustic soda when the calf is four to ten days old, while the button is still loosely attached.

Clip the hair from around the horn and rub vaseline in an inch circle below the base of the horns to prevent the caustic running

Ideal Type Jersey Bull
Courtesy of American Jersey Cattle Club.

down the side of the head. Wrap a stick of caustic with paper to protect the hands, leaving one end exposed. Moisten the end of the stick and rub on each horn making a raw spot about the size of a quarter. Take care that the caustic does not run down the calf's head into the eyes.

Method of Drenching and Giving Medicine

Animals should be fastened securely before attempting to drench. Use a long necked bottle, seize the nostrils of the heifer in the left hand and insert the neck of the bottle in the side of the mouth between the jaws back of the teeth. Do not hold the head too high and cease drenching and lower the head at the first indication of choking or coughing. Often mechanical pneumonia is caused by some of the liquid entering the lungs through improper drenching.

Medicine can be given to calves in the milk or by the use of a tablespoon in placing the medicine on the back part of the tongue.

Management of the Dairy Calf from Six Months to One Year of Age

The calf can be weaned from skim milk when it is six months old. During the summer the calf can run on pasture but should receive about two pounds of grain daily. During the winter, legume hay and two pounds of grain daily should be sufficient for satisfactory development. Feed the heifer enough to keep her in good condition—not too fat, but making a uniform growth.

Management of the Dairy Heifer from One to Two Years of Age

Heifers becoming a year old in the spring should be given good pasture during the summer. If the heifers come through the winter in thrifty condition and the pasture is good, this should be sufficient feed for normal growth. However, if the pasture is scant it should be supplemented with hay or grain. The heifers should have access to plenty of fresh water and salt at all times.

Heifers coming a year old in the fall should receive shelter and protection from the weather through the winter. Often, due to careless management, irregular or improper feeding, or exposure to bad weather during the winter months, heifers lose flesh and become thin instead of gaining a pound or so each day.

Good quality legume hay and two pounds of grain daily should produce satisfactory growth with heifers until they are within three months of calving, when the grain ration should be increased unless the heifers are in excellent condition.

Time to Breed

Age of breeding is a most important consideration in the management of yearling heifers. Milk production has an important influence on growth and development and too early breeding is apt to result in undersize, which often limits the producing ability of the animal. In general, heifers should be bred between 15 and 20 months of age. If heifers are well-grown for their age and in good condition they may be bred when 15 months old, but usually 17 to 19 months will give additional size, which is greatly to the advantage of cows after they reach maturity.

The following ages are recommended for breeding normally developed heifers of different breeds:

Holstein-Fresians	18 to 20 months
Ayrshires	17 to 19 months
Guernseys	17 to 19 months
Jerseys	15 to 17 months

Club members should be especially careful in selecting the bull to which the heifer is to be bred. The bull should be registered, of the same breed as the heifer, preferably a "proved bull," but at least one of good type with an excellent pedigree. A record of the breeding date should always be kept so that the approximate date of calving will be known.

Care of Heifers Before Calving

When heifers are within two or three months of the calving date, additional grain should be fed to get them in proper physical condition to successfully pass through the ordeal of calving and to withstand a long period of milking. Good condition is of special importance with heifers as they should continue to grow while milking.

A suggested grain ration of equal parts of ground corn or barley, ground oats and bran may be fed to advantage with alfalfa. The quantity should depend on the quality of the roughage and upon the condition of the heifers. Two pounds of grain a day is sufficient to start with and this amount should be gradually increased to as high as eight pounds daily in case heifers are in very thin condition.

A week before calving date, the ration should be gradually reduced to three or four pounds daily and changed to a laxative nature, composed largely of bran, or equal parts of bran and oats with the roughage. If there is a tendency toward constipation, give a half pound of epsom salts.

The cost of feeds suitable for properly conditioning a heifer or a cow before freshening will be returned several times over in the form of higher production.

The heifer should be put in a well bedded box stall two or three days before calving and kept there for two or three days after calving. Never milk the heifer before she drops her calf.

A practice followed by many dairymen in the winter is to keep water away from the cow for a few hours before calving. After calving, she is given two buckets of warm water, the first bucket containing a handful of epsom salts. The cow is in a weakened condition at this time and the warm water tends to stimulate her and epsom salts is a laxative.

Heavy grain feeding should not be started for several days after calving. Ordinarily, alfalfa hay with small amounts of bran and oats will be sufficient for the first week while the udder is inflamed.

Feeding the Producing Cow

In sections of Idaho where alfalfa hay is available in large quantities and at a reasonable price the cheapest and best roughage is alfalfa alone, fed to the limit of the cow's capacity, which may be 25 to 35 pounds a day.

In sections of the state where wet beet pulp or cull potatoes are available at a reasonable price, they should supplement the alfalfa roughage. Thirty to fifty pounds of wet beet pulp daily, with all the alfalfa the cow will consume, makes excellent roughage. Twenty to thirty pounds of cull potatoes may be fed daily depending upon the size of the cow. If the quantity of beet pulp or cull potatoes is limited, it is more desirable to feed a smaller daily allowance and continue feeding until spring, than to feed a larger daily allowance for a short time and then be without during part of the feeding period.

Beet pulp and cull potatoes should be fed while the cows are in stanchions; not in open feed racks and never upon the ground.

The above roughages grown in southern Idaho are usually of sufficiently high quality so that when fed to the limit of the cow's capacity they supply sufficient nutrients for the cow to yield approximately one pound of butterfat daily and yet remain at normal body weight. However, heifers in milk require additional feed for proper development.

When alfalfa is the only roughage, either of the following home-grown grain mixtures are satisfactory:

1. Ground barley or corn, 3 parts and wheat bran 1 part
2. Ground barley or corn 4 parts, ground oats 1 part, and wheat bran 1 part

Ideal Type Brown Swiss Cow
Courtesy of Brown Swiss Cattle Breeders Association of America.

When alfalfa hay is supplemented with silage, wet beet pulp or cull potatoes, either of the following rations is recommended:

1. Ground barley or corn 1 part, ground oats 1 part and wheat bran 1 part
2. Ground wheat 1 part, ground oats 1 part and wheat bran 1 part

Holsteins producing less than a pound of fat daily or approximately 28 pounds of milk, require no grain, but for every pound above 28, give 0.4 pound of grain. A Holstein cow yielding 40 pounds of milk should receive 4.8 pounds of grain and one giving 50 pounds should receive 8.8 pounds.

Jerseys producing less than a pound of fat or approximately 18 pounds of milk daily, require no grain, but for every pound of milk over 18, give 0.5 pound of grain. A Jersey cow yielding 25 pounds

of milk daily should receive 3.5 pounds of grain, whereas one giving 35 pounds should receive 8.5 pounds.

Guernseys producing less than a pound of fat or approximately 20 pounds of milk require no grain, but for every pound over 20, give 0.5 pound of grain. A Guernsey yielding 30 pounds of milk daily should receive 5 pounds of grain; one giving 40 pounds of milk should receive 10 pounds of grain.

Breeds such as Aryshire and Brown Swiss, producing 25 pounds of milk testing 4 per cent, require no grain, but for every pound above 25 pounds give 0.45 pound of grain.

Feeding Grain in Northern Idaho

In northern Idaho where alfalfa is not so plentiful and prices are higher, also in sections where mixed hay and grain hay are fed, silage or roots should make up part of the roughage.

Since this roughage is lower in food nutrients than the straight alfalfa roughage used in southern Idaho, the grain ration should be different and a greater amount of grain should be fed.

The following grain mixtures will be satisfactory:

1. Ground wheat, 1 part; ground oats, 2 parts; wheat bran, 1 part; pea meal, 1½ parts
2. Ground wheat, 1 part; ground oats, 2 parts; oil meal, 1 part
3. Ground barley, 4 parts; ground oats, 2 parts; oil meal, 1 part

Feed no grain to Holsteins producing less than 16 pounds of milk daily, but for every pound over 16 give 0.4 pound of grain.

Feed no grain to Aryshires and Brown Swiss producing less than 14 pounds of milk daily, but for every pound over 14 give 0.45 pound of grain.

Feed no grain to Guernseys producing less than 11 pounds of milk daily, but for every pound over 11 give 0.5 pound of grain.

Feed no grain to Jerseys producing less than 10 pounds of milk daily, but for every pound over 10 give 0.6 pound of grain.

Dry Rest Period

The producing cow should have at least six weeks dry rest before calving. She should be fed during this period so as to be in good flesh to start her year's work. If she does not have a rest period and is not in good condition, her production will be greatly reduced. It is advisable to feed grain in addition to alfalfa or pasture, in sufficient quantity to get the cow fat before calving.

Fitting and Showing Dairy Cattle

The Fitting Process

The fitting and training process should begin six to eight weeks before the first show, provided the heifer is in good growing condition. If the heifer is thin, a longer period will be required to get her properly fitted.

A grain ration which has been found satisfactory is a mixture of: One part wheat bran, one part ground oats, one part ground corn or

barley, and one-half part oil meal. Oil meal may be eliminated if too high in price.

The essential thing in the early fitting process is to get the hair to slipping. This is accomplished by the use of sweat blankets and feeding so as to get the heifer thriving.

During the fitting period, the heifer should be blanketed constantly and kept in the barn, preferably in a box stall or tied up, but not in a stanchion. Blanketing and brushing keeps the animal clean, causes the hair to lie down and the dead hair to come out, develops a glossy coat and gives the skin a thin, mellow texture. Burlap sacks sewed together make satisfactory blankets during the fitting process.

Ideal Type Ayrshire Cow
Courtesy of Ayrshire Cattle Breeders Association.

Sweat blankets may be made by putting a light wool or flannel blanket underneath the burlap sacks.

About six weeks before show date put a sweat blanket on the heifer and start feeding grain in small amounts twice daily unless the heifer is very thin, when grain should be fed three times daily. Increase the amount of grain, depending upon the condition of the heifer. If thin, feed heavy, if in good condition feed light.

The early part of the fitting period should consist primarily of blanketing and feeding. If the heifer gets in good condition with the hair slipping, a short finishing period of intensive rubbing and brushing should put the heifer in show condition. Rubbing without the hair slipping will not give the mellow texture and quality of hide and hair which is desired in the properly fitted show heifer.

At the beginning of the fitting period, thoroughly wash the heifer with tar soap and water. The soap should be thoroughly washed out of the hair and the animal dried under a blanket.

Sponge the heifer once a week. It is not desirable to wash Jerseys and usually not Guernseys except at the beginning of the fitting

process or when they become badly soiled. After the hair starts slipping, use sand paper or steel wool to pull out dead heirs.

Heifers should be brushed thoroughly each morning, taking care not to welt the hide after they have become partially fitted. After brushing, the animal should be rubbed down with an oiled flannel cloth. The oil used may be either sweet oil or olive oil, or better still a mixture of two parts of either oil and one part of wood alcohol. This should be followed by a vigorous rubbing with the bare hands, always rubbing the way the hair lies. Grooming and hand-rubbing stimulate circulation, bring out natural oil, and give a gloss to the coat which cannot be secured as effectively in any other manner.

Manure stains should be washed off with warm water containing a few drops of bluing. Clorox is also used to remove stains.

Unless the hair is extremely long and coarse, and time does not permit proper fitting, clipping is not recommended except for the head, tail, udder, and belly. These parts should always be clipped just before the show to give a neat appearance.

Hoofs and Horns

Train the horns to curve inward and downward. Horn trainers and weights are often necessary to properly train the horns. These should be used two or three months before the show season, depending on conditions. Coarse, rough horns should be cut down with a half-round rasp and rough parts scraped off with a piece of broken glass or steel scraper. Horns should be smoothed with sandpaper and emery cloth. The smoothing process should be completed by using strips of flannel cloth and applying a small amount of paste made up of pumice stone and sweet oil. The flannel cloth is see-sawed around the horns many times.

Final polish should be made just before the show using silver polish and rubbing vigorously with a soft flannel cloth. Applying sweet oil and rubbing vigorously with a flannel cloth gives a quick polish but it becomes dull in a few moments. If the hoofs are long or out of shape, they should be trimmed and properly shaped at the beginning of the fitting process in order that the heifer may completely recover from any lameness that may occur after trimming the hoofs.

Training the Calf

The good showman begins training each animal to stand and to pose as soon as the fitting period begins. The heifer should be taught to lead and to stand so as to show style. Study the heifer at home and learn the position in which she appears best. A front foot can be moved backward by stepping lightly on the toes or a hind foot forward by touching just under the dewclaws. Good points of the heifer are emphasized by proper posing. The head should be held up and the four feet placed squarely under the heifer, with the front feet even and one hind foot slightly stretched, but not enough to show a weak back. Too often extreme stretching emphasizes weak points. The heifer should be trained to stand squarely on her feet. A high back may be improved by pinching over the back, and a sloping rump

improved by pinching over the loin. Lead the heifer each day and she will soon learn to assume the desired pose.

Train the heifer in starting, in leading around the ring, in stopping promptly, and taking the desired position.

Always walk on the left side of the heifer, holding the lead strap in the right hand up close to the animal's head, or walk backward slowly, holding the lead strap in the left hand and watching the heifer closely to be sure that she remains in the proper position.

The Day of the Show

Try to arrive at the show grounds early enough to permit complete rest before the class is called. First, groom thoroughly. Then, if Holsteins, wash or sponge with soap and water and put on the blanket, being careful not to ruffle the hair. Wash the tail the night before show day with warm water and soap. Rinse the switch of the tail with water containing a few drops of bluing and alum water. Bluing tends to whiten the switch and alum water aids in making the kinks. Braid the switch very tightly while wet in eight or ten braids and leave until about an hour before the class is called. Unbraid the switch, comb out and brush backward, which should result in a fluffy bush switch.

A common practice among showmen is to "bag" cows in milk by not milking for 24 hours. However, it is more desirable to leave the cow unmilked for only 12 hours. Since overbagging is injurious to cows, many showmen "bag" very little and show their cows with normal udders. In case one quarter or side of the udder is larger than the other, showmen equalize the four quarters by partially milking one quarter or side of the udder.

Just before going into the ring, give the final polish to the horns and go over the entire animal with a flannel cloth dampened with a mixture of sweet oil, wood alcohol, and tincture of green soap. This removes all dust and leaves a lustre and gloss.

It is often advisable to put a little salt in the grain the night before the show in order to have the heifer thirsty the next day so she can be properly "barreled." It is essential to get as much "fill" as possible with hay, grain, and any succulent feed, and finish off with water. In case of calves the "fill" may be secured by feeding milk thinned with water. Take care not to overbarrel calves as it causes them to walk humped. Water the heifer about an hour before showing, but do not allow her to drink an unreasonable amount as she may appear bloated and unbalanced.

Remember that the showman as well as the calf should be clean and neat at all times.

In the Show Ring

Properly showing a heifer is an art. Some heifers show best when stretched; others, when the feet are well under the body. Keep the heifer before the judge in the position which makes her look best. Remember that the judge wants to see the heifer and not the showman, therefore, the heifer should always be kept between the judge

and the showman. Watch the judge and keep showing the heifer every minute she is in the ring.

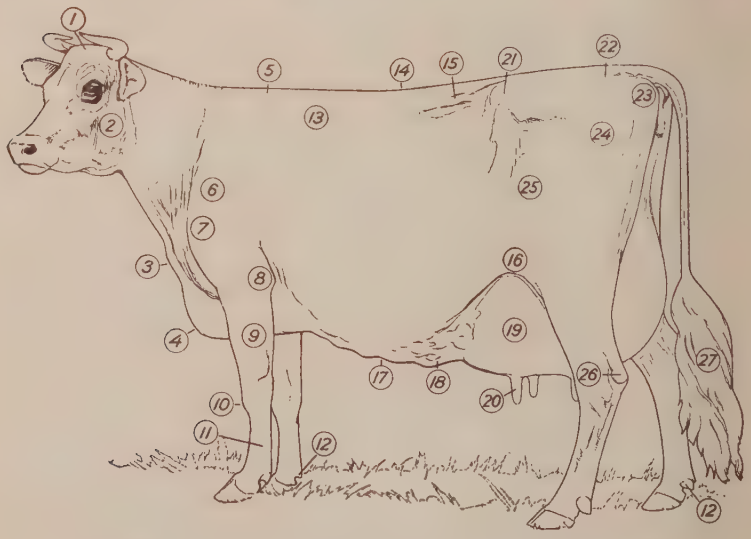
Winnings depend greatly upon performance within the ring. The contest begins as soon as the show ring is entered and continues until the ring is left. Never relax or permit the heifer to relax, and if possible to prevent it, do not permit the heifer to be hidden from the view of the judge.

All cannot win, but a good loser makes many friends. If defeated, take it good naturedly. Find out the weak points of the animal or of the showmanship and determine to improve them for the next show.

Judging Dairy Cattle

Names and Locations of Parts of a Dairy Cow

Every dairy club member should become familiar with the names and locations of the different parts of a dairy cow and their correct



*Outine of Dairy Cow Giving Names and Location of Parts
Courtesy U.S. Department of Agriculture, Bureau of Dairy Industry.

form. This is essential in order to receive proper benefit from instruction in judging.

This may be accomplished by a contest to determine who can name correctly the greatest number of parts, or in answer to roll call.

List of parts with number referring to outline:

*Diagram of cow showing names and location of parts; 1, Poll; 2, jaw; 3, dewlap; 4, brisket; 5, withers; 6, shoulder; 7, point of shoulder; 8, point of elbow; 9, forearm; 10, knee; 11, shank; 12, dewclaw; 13, crop; 14, chine; 15, loin; 16, flank; 17, milk well; 18, milk veins; 19, udder; 20, teat; 21, hipbone; 22, rump; 23, pin bone; 24, thurl; 25, stifle; 26, hock; 27, switch.

What is Desirable in a Dairy Cow

The primary function of a dairy cow is milk production, and the judging of dairy cattle is based on the theory that there is a relationship between form and function, or between type of an animal and her ability to produce milk.

Since the dairy cow converts feed into milk she should have characteristics indicating capacity to consume and digest large quantities of feed; characteristics indicating constitution and vigor necessary to regularly and consistently assimilate large quantities of feed and

Ruth Evans, Weiser, Idaho, National Holstein-Friesian Champion Club Girl 1929

stand the strain of heavy milk production; characteristics indicating ability to convert feed into milk constituents instead of body fat; characteristics indicating extensive milk secreting organs which take the milk constituents from the blood while circulating through the udder and store them in the udder in such form that they may be conveniently extracted.

In addition there are what may be called the fancy or minor utility points, such as pretty head, level rump, and straight back; also breed type or certain characteristics of a particular breed; and a pleasing general appearance. These so-called fancy points are considered carefully in show ring judging, although they may not be closely correlated to producing ability. However, they do increase

the selling value of the animal as they add to the popular conception of beauty.

Mammary System

The mammary system consists of the udder, milk veins, milk wells, and teats. It is essential that a high producing dairy cow have a well-developed mammary system and a cow that does not, should not win in the show ring.

Long, wide, capacious udder

Udder narrow, short, lacking capacity

Extreme depth and refinement

Lacking depth and dairy temperament

Courtesy of Extension Service, Holstein-Friesian Association of America

The udder should be large, as it is the storage reservoir for milk. In order to have large capacity the udder should be level with the floor, extend well forward and far up behind, and not be funnel shaped or tilted. It should be soft and pliable, indicating active milk glands which take the milk constituents from the blood. A hard, meaty udder or one containing lumps is not desirable. A good udder shrinks greatly when milked and is soft and pliable, while a meaty udder remains hard and does not reduce very much. The udder should be strongly attached both front and rear to prevent breaking away from the body and becoming pendulous. This weak-

ness is very objectionable. Quarters should be evenly balanced and symmetrical.

Blood vessels on the under side of the body are called milk veins. They should be large, long, and crooked and enter large milk wells.

Teats should be convenient in size, uniform, and evenly placed on each quarter to aid milking and improve the capacity and symmetry of the udder.

Capacity to Consume and Digest Feed

A high producing dairy cow must consume and digest large quantities of feed. This requires a large storage capacity. Capacity is indicated by the length, depth, and breadth of the body where the organs of digestion are located. Ribs should be wide apart and well sprung.

Size is an important factor in a dairy cow. Other characteristics being equal, the larger the cow within the breed the better. However, coarse-boned cows lacking dairy temperament are not desired. Small cows within the breed may be too refined and lack capacity. The size of the muzzle is closely correlated to feed capacity, so it should be large and with a broad mouth.

Constitution and Vigor

Constitution and vigor refer to ability of an animal to stand up under the strain of heavy milk production. This requires large heart and lung capacity which are indicated by a deep, full heart-girth and great width of chest. Crops and foreflank should also be full and fore ribs well sprung. Wide, open nostrils also indicate an active respiratory system.

Dairy Conformation and Temperament

Dairy conformation and temperament denote the tendency of a cow to convert feed into milk rather than into body fat. Such characteristics are angularity of body, general trimness and refinement, clean cut neck and shoulders; with prominent withers, hips and pin bones, and general lack of beefiness; appearing just opposite from the beef cow in being active and alert. The skin should be mellow, loose, medium in thickness, with the hair soft, indicating good circulation and secretion. Dairy temperament does not mean a cow thin in flesh. It is expressed by dairymen as "milky" in appearance. A cow should carry sufficient flesh to indicate that she is thriving.

General Appearance and Breed Type

General appearance includes such points as the size and development of one part of the body in relation to another, the style and carriage of the animal, and the smooth blending of all parts, resulting in symmetry and balance. It includes the characteristics combining high production and beauty. In addition to balance of mammary system, capacity, constitution, and conformation, it is desirable to have a straight top line, wide loin, long level rump with pin bones wide and almost level with the hip bones, and a smooth tail setting.

A dairy cow should conform to the breed characteristics of her particular breed as to head, color and size.

Score Card with Purpose and Values

Judges of dairy cattle must know the relative importance of each part of the animal. Major characteristics are described in detail on the general score card and numerical value ascribed to each part. Club members should become thoroughly familiar with this description, and with the points allowed for each division.

In comparing the strong and weak points of two animals it should be remembered that while the score card is the guide as to value of different parts, if a marked deficiency should occur, a greater cut should be made than is indicated on the score card. For example, while the score card allows only five points for rump, if an animal has a very long sloping rump, more than five points should be deducted; a very pendulous udder or a funnel shaped udder would mean a deduction of more than six points.

However, the score card should be used only in the beginning to aid in acquiring knowledge of the relative values of the different parts, since dairy cattle are judged in the show ring by comparison.

The American Dairy Science Association has prepared a general score card covering the essential characteristics of a dairy cow. It lists and describes each part in groups under five heads, and allots a definite numerical value to each.

University of Idaho—Department of Dairy Husbandry Score Card for Dairy Cows

(Adopted by the Amercian Dairy Science Association 1922)

Scale of Points	Perfect Score
1. Characteristics Indicating Dairy Form	
A. Style and General Appearance—20 points	
1. Head erect, clean cut; neck slender; eye prominent, alert and placid	3
2. Back, straight and strong; hips wide apart and level	4
3. Rump, long, wide, and level; thurl, wide apart and high; level tailsetting	5
4. Legs, straight; bone fine	3
5. General build, rugged and large for the breed without coarseness; Jerseys 950 lbs.; Guernseys and Ayrshires 1100 lbs.; Holsteins 1350 lbs.	5
B. Dairy Conformation—15 points	
6. The cow should be clean cut with feminine appearance; absence of tendency to lay on fat	5
7. Shoulder, withers, vertebra, hips, and pin bones prominent and free from fleshiness. (Period of lactation to be considered)	4
8. Loin wide; ribs long and wide apart	3
9. Disposition active, with good nerve control	3
2. Characteristics Indicating Constitution, Vigor and Condition—15 points	
10. Chest, broad and deep with well sprung ribs	8
11. Nostrils, large and open	2
12. Condition, thrifty and vigorous, in good flesh but not beefy	5
3. Characteristics Indicating Ability to Consume and Digest Feeds—15 points	
13. Muzzle large; mouth broad	1

14. Skin mellow, loose, medium thickness showing good circulation and secretion; hair soft	4
15. Barrel, deep, wide and long, well supported; ribs far apart	10
4. Characteristics Indicating Well Developed Milk Secreting Organs—35 points	
16. Udder:	
A. Capacity—large in size	7
B. Quality—pliable, free from lumps	7
C. Shape—extending well forward and well up behind, level on floor, not pendulous; quarters full and symmetrical	6
17. Milk veins, large, long, crooked, branching; milk wells large and numerous	7
A. Milk veins on udder crooked, numerous and large...	3
18. Teats, convenient size, uniform, and well placed	5
	100

Note: In case of any marked deficiency or any serious abnormality as many as 50 points may be deducted from the total score of an animal. Beware of giving a thin beef cow as good a score as a dairy cow.

Steps in Learning to Judge Dairy Cattle

The first step in learning to judge dairy cattle is to learn the names and locations of the parts of a dairy cow.

Club members should study the cut and learn the names and locations of different parts and then practice naming and pointing out the parts at a club meeting.

The second step in learning to judge is to learn what is desirable in a dairy cow. This is best illustrated by a cow-judging demonstration.

The third step is to study the general score card and learn the values of the different parts. This can be demonstrated to the best advantage by scoring a good and a poor cow. The two cows should be much different in type in order to emphasize the relative values of different points.

The fourth step is comparative judging. This can be accomplished by having the club members rank four cows on the five major characteristics:

1. Breed type and general appearance
2. Dairy conformation and temperament
3. Constitution
4. Capacity to consume and digest feed
5. Mammary system

After club members have become accustomed to ranking cows on these major characteristics they may be given placing cards upon which to place a group of cows and then hand in their cards. This should be followed by the reason cards upon which to rank the cows for the major characteristics.

In using the reason cards, club members should first place the cows on a separate placing card. The object of the reason card is to familiarize the members with the major characteristics and to get them accustomed to comparative judging. They should not be permitted to rank the cows on major characteristics and then arrive at the top cow by determining which one ranked first the greatest num-

ber of times. Major characteristics do not have the same importance. Often a cow may rank first in three or four major characteristics and be so poor in one or two characteristics that she should be at the bottom of the class.

In giving oral or written reasons, club members should confine their reasons to the major characteristics.

Method of Comparative Judging

In comparative judging, animals are ranked according to trueness of type; so the first step is to fix in the mind a picture of the ideal animal. This can best be accomplished by a careful study of the correct form or type as represented in ideal type models and pictures of representative animals of different breeds.

Each breed has certain particular characteristics such as color, size, and special type of head which are common to the breed alone and known as special characteristics indicating breed type. However, the principal characteristics of a dairy cow are the same for all breeds.

In judging dairy cattle, do not overlook the primary function of a dairy cow: that is, milk production.

Usually, four cows are used in judging practice and judging contests.

1. Stand off 20 to 25 feet from the cows and get a general impression of the group, preferably as they walk. Observe and compare the cows for the major characteristics, from the side. Note breed type and general appearance, dairy conformation and temperament, constitution, capacity to consume and digest feeds, and mammary system.

Well developed rear udder
Courtesy of American Jersey Cattle Club

Often there is an outstanding cow, which is superior in practically all characteristics or strong in several and not weak in any. There may be one animal much inferior to the others. She may have the udder broken away,

funnel shaped, or tilted, or she may lack barrel or be pinched in heartgirth, have a sloping rump, or some other weak point or points which make her an easy bottom for the class.

Sometimes the class divides itself into one or two pairs of cows which closely resemble each other. Get these firmly fixed in mind and rank the cows accordingly from the side.

2. Observe the cows from the rear and front and examine them more closely to confirm or change the first decision on close inspection. It is usually not necessary to feel the different animals except to verify the eye as to soundness and quality of udder or number and size of milk veins and milk wells.

3. If close examination of the best appearing cow fails to disclose any defects, place her first, in mind. Then if there is an extremely poor animal, dispose of her by mentally placing her fourth. Then take the pair which are more nearly equal and study them from side, rear, and front, and decide which of the two should go second and put the other in third place.

Sometimes a class naturally divides itself into two pairs. Observe each pair and decide which pair should go at the top and which at the bottom, then pick the superior animal of each pair.

In judging young animals, the same characteristics are desired as in mature animals, except that less emphasis is given to mammary development.

The udder of heifers should be examined for uniformity of quarters and teats, length and width of udder, and placement of teats.

In judging heifers, the same breed type and general appearance, dairy confirmation, constitution, and capacity are desired as in older cows, but care must be taken to differentiate between beefiness and good condition, as young animals are usually in good condition.

With the exception of the mammary system, the same essentials are looked for in judging bulls as in judging cows. In addition, the bull should possess masculinity. This is indicated by massiveness, heavier front quarters, and a well developed crest. The head is broader and the horns coarser and thicker than those of a cow.

Coöperative Extension Work in Agriculture and Home Economics,
University of Idaho College of Agriculture and U.S.
Department of Agriculture Coöperating

4-H CLUB JUDGING CONTEST

Club member's name and number .....

Class judged .....

PLACING: First ..... Second. ..... Third ..... Fourth.....

Grade on placing .....

Grade on reasons .....

Class .....

The placing of the animals should be indicated on the placing cards and the placing cards handed to the local leader before the reason cards are distributed.

Dairy Cattle Reasons Card for Beginners

Class.....

Student's No..... Group .....

Student's Placing	1st	2nd	3rd	4th	Grade
Breed type and general appearance					
Dairy conformation (Temperament)					
Constitution					
Capacity to consume and digest feeds					
Mammary system					

Final grade.....

It is suggested that this card be used for beginners to familiarize them with the essential characteristics of a dairy cow. After club members have become familiar with the major characteristics and have formed the habit of ranking the cows, reason cards may he discontinued.

A Guide in Giving Reasons

Either written or oral reasons are usually required in judging contests, and usually equal weight is given to both reasons and placings.

Reasons should be presented in logical order and should be comparative, specific, and brief. The object of giving reasons is to determine whether or not the club member actually saw the strong and weak points of the animal.

The term "better" should not be used unless qualified and explained. Use definite terms such as longer, stronger, deeper, wider, etc.

In giving reasons show why an animal is superior to the one over which it is placed and do not give points of inferiority. Sometimes two or three reasons are sufficient for placing one animal over another. Do not give several minor details but select the important points. Arrange reasons according to main differences and do not mention non-essentials.

The following will serve as a guide to the proper form of giving reasons:

"I place this class of Jersey cows, D-A-C-B. I place D first and over A on general appearance, constitution, and mammary system. D is smoother throughout and is longer, wider, and more level in the rump, being higher in the thurls.

"On constitution, because D is deeper in the heart girth and fuller in fore flank, with greater width of chest, being wider between the front legs.

"On mammary system because D has a more evenly balanced udder, with teats evenly placed, and the udder attached farther forward and higher behind. The milk veins are longer, larger, and more tortuous.

"I place A over C because of breed type, dairy conformation, and capacity. On breed type because A has a more typical Jersey head, being shorter with more dished forehead, having larger, brighter eyes, and cleaner cut below the eyes. On dairy conformation because A is less beefy in appearance, showing a more slender neck, and sharper and smoother withers. On capacity, because A has a longer and deeper barrel with greater spring of rib."

A deep, wide chest indicates constitution
Courtesy American Jersey Cattle Club.

In the same way give reasons for placing C over B. Usually it is not necessary to give reasons for placing the fourth animal last unless it has some marked deficiency not brought out in the comparative reasons.

Descriptive Terms Used In Referring to Dairy Cattle

Mammary System: Udder evenly balanced, symmetrical, attached high behind, extends well forward, soft and pliable; teats

evenly placed on each quarter; milk veins large, long, and crooked; large wells.

Udder unbalanced, meaty, pendulous, broken away from body, funnel shaped, tilted, cut up, divided, deficient in rear or forequarter; teats too close together.

Capacity: Greater depth of body, deeper barrel, greater spring of rib.

Close coupled, shallow barrel; lacks the depth of barrel; doesn't have the spring of rib.

Constitution: Deeper, thicker heartgirth; greater width of chest; fuller in the crops, and fuller in fore flank.

Narrow chest; pinched in fore flank, weak in crops, shallow in heartgirth.

Dairy Conformation: More dairy type, clean cut neck and shoulders, lack of beefiness, more prominent withers, hips and pin bones. More dairy type, more dairy temperament.

More beefy, heavy over shoulders, thick short neck, lacks dairy temperament, dull eye, dead headed, coarse thick hide.

Breed Type and General Appearance: More breed character, more typical head, greater style and carriage, more size, longer more level rump, pin bones high and wide apart; neat, level tail setting; well balanced, more symmetrical body; parts blend nicely; head and neck clean cut; smooth, straight top line.

Lacks breed character; plain head; lacks style and symmetry; sloping rump; easy in back; lacks refinement and smoothness throughout; coarse over tail head; heavy over shoulders and crops.

A *purebred* animal is one whose sire and dam are registered or eligible to registry in a recognized breed association. Do not use *thoroughbred*. This means the English running horse. Do not use the term *full-blood*. Use the correct term, *purebred* or *registered* if the registration papers have been issued.

A *cross bred* animal is one whose parents are purebred, but of two different breeds.

A *grade* is an animal having a purebred for one parent and the other parent not a purebred.

A *scrub* is an animal of nondescript breeding.

Breeds of Dairy Cattle

Every club member should be able to identify the five principal breeds of dairy cattle, and know the origin, history and general characteristics of each.

Club members are referred to Farmers' Bulletin No. 893 U.S. Department of Agriculture, "Breeds of Dairy Cattle", which gives the desired information in a brief, concise form.

Records and Record Keeping

Accurate records are essential for the successful operation of a profitable dairy business. Club members should keep accurate records of the breeding and calving dates of their heifers, also the feed costs and the milk and butterfat production.

Breeding and Calving Dates

Breeding and calving dates are required before the offspring can be registered. Breeding records indicate the approximate date of calving, and the heifer or cow may be taken care of accordingly.

Production and Feed Cost Records

Production and feed cost records are necessary in order to know the exact profit or loss, and whether or not it will pay to keep the cow. These records will supply information on which to gauge the amount of feed in accordance with production.

Very little time is required to keep satisfactory records. After each milking, weigh the milk and record the amount on a milk sheet tacked on the wall of the barn. One day each month, take a sample of the night's milk and a sample of the morning's milk, mix the two samples and test the result. This will give an average test for the month. At the end of the month add the daily milk weights and apply the per cent of fat secured in the test to the monthly total of milk and determine the pounds of butterfat produced during the month. Use the average price of butterfat for the month, and determine the value of the fat produced by the cow. Add to this amount the value of the skim milk (assume that skim milk is worth 40 cents per hundred pounds and that skim milk is 85 per cent of the whole milk) to find what the cow actually made during the month.

Deduct the value of the feed consumed by the cow during the month from the value of the product and determine the amount the cow actually made above feed cost. Keep these records for a year and know the amount and cost of feed for the year, the amount of milk and butterfat produced and their value, and the profit or loss for the cow during the year.

Production of Clean Milk

Production of clean, high quality milk is closely related to greater consumption of dairy products and higher prices for dairy products.

Essential factors in the production of high quality milk are clean and healthy cows, clean and healthy men, complete sterilization of utensils, proper cooling of milk, and clean barn and milk house. Clipping the flanks and udder, wiping the udder with a damp cloth just before milking, and the use of covered milk pails greatly reduce the amount of dirt that enters the milk.

For further information on producing high quality milk, club members are referred to the following Government bulletins which can be obtained from the U.S. Department of Agriculture, Washington, D.C.: *Farmers' Bulletin No. 602; Leaflet No. 2; Leaflet No. 25; Farmers' Bulletin No. 954; Farmers' Bulletin No. 1315; Farmers' Bulletin No. 1477; Idaho Experiment Station Bulletin 110.*

Demonstrations

Each dairy club should have one or more demonstration teams of two or three members. All teams should give their demonstrations before the local club group and before the people of the home com-

munity. The champion demonstration team should be selected by competition among teams.

Any practical problem closely related to the dairy calf club project which lends itself to demonstration may be prepared and given.

The following subjects are suggested for demonstrations:

1. Judging dairy cattle
2. Feeding dairy cattle
3. Showing and fitting dairy cattle
4. Testing milk
5. Producing clean milk.

Club members should use their initiative and prepare demonstrations.

Questions

Whole Milk Period

1. Why do many dairymen leave a new born calf with its mother for a period of one to three days?
2. What is the best method to teach a calf to drink?
3. At what temperature should milk be fed? Why?
4. How many pounds of whole milk should be given the young calf at first?
5. What is the daily rate of increasing the amount of milk?
6. What is the maximum amount of whole milk necessary to secure good growth?
7. How does overfeeding of whole milk affect a calf?
8. What is the maximum number of weeks that a calf should receive whole milk?
9. How does the feeding of whole milk for a long period affect the calf?
10. What is the best method to determine the amount of milk to feed?

Skim Milk Period

11. How old should a calf be when the change from whole milk to skim milk is started?
12. What is the rate of substituting skim milk for whole milk?
13. How much skim milk should the calf be receiving at the end of the fifth week? Three months?
14. What is the maximum amount of skim milk that it is economical to feed daily?
15. How does overfeeding of skim milk affect calves?
16. At what age should a calf start to eat grain?
17. What is the method to teach a calf to eat grain?
18. Should grain be fed wet or dry?
19. Should calves have water available? Should they be given water immediately after milk feeding?
20. Give a grain mixture for calves.
21. What is the maximum amount of grain necessary for normal growth when fed with alfalfa hay, pasture and skim milk?

22. Describe a method of raising calves where skim milk is not available.
23. How is reconstituted skim milk or buttermilk prepared?

Common Diseases

24. Give some common causes of calf scours.
25. Give a remedy for calf scours.
26. What are the indications that lice are on a calf?
27. Give a remedy for lice.
28. What are the indications of ringworm?
29. Give the treatment for ringworm.
30. What sanitary methods are recommended to prevent the spread of white scours?

The Dairy Heifer from Six to Eighteen Months

1. At what age should a calf be weaned from skim milk?
2. How much grain should a calf between the age of six months and one year receive daily?
3. How should heifers between one and and two years of age be cared for?
4. At what age should Holstein heifers be bred? Aryshires? Guernseys? Jerseys?
5. What kind of bull should the club members use?

Care of the Heifer at Calving Time

1. Should the heifer be thin or fat at calving time? Why?
2. Give a grain ration to feed heifers preparatory to calving.
3. What amounts of grain should be fed heifers preparatory to calving?
4. What grain mixture and how much should be given daily during the last week?
5. Should the heifer be milked before calving?
6. Should heavy grain feeding be started immediately after calving?

Feeding the Producing Cow

1. What is the cheapest and best feed for producing cows in most sections of Idaho?
2. When cows are consuming 30 to 40 pounds of alfalfa hay daily what daily production of butterfat is required before it is economical to feed grain?
3. Do heifers in milk require additional feed for proper development?
4. What two homegrown grain mixtures are recommended for cows when alfalfa hay is the only roughage?
5. What rate of grain feeding is recommended for Holsteins producing more than one pound of fat daily?
6. What rate of grain feeding is recommended for Guernseys producing more than one pound of fat daily?
7. What rate of grain feeding is recommended for Jerseys producing more than one pound of fat daily?
8. How many weeks dry period should the producing cows have?

9. Should a cow be thin or fat at freshening time?
10. Should a cow be fed grain during the dry period?

Fitting and Showing Dairy Cattle

1. When should the fitting and training process begin when preparing a heifer for show?
2. Should the heifer be blanketed during the fitting process?
3. What grain mixture is recommended for fitting dairy cattle?
4. Is clipping the whole body recommended for proper fitting?
5. What parts of the body should be clipped just before the show?
6. What is the value of blanketing and brushing?
7. When should the animals be washed?
8. How often should the animals be brushed?
9. Should a stiff or soft brush be used?
10. What value is grooming and hand rubbing?
11. Describe method of preparing the horns.
12. What material is used to give the final polish to the horns?
13. When should the hoofs be trimmed?
14. Is it important to train the heifer to pose properly?
15. How should an animal be held while in the show ring?
16. What is the last step to take before leading the animal into the show ring?

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Judging Dairy Cattle

1. Name and locate the different parts of the dairy cow.
2. How many feet away from the group of animals do judges usually stand?
3. Give the five major characteristics used in judging a dairy cow.
4. Give a description of each major characteristic as given on the score card. How many points does the score card allow for mammary system or milk secreting organs? Ability to consume and digest feed? Constitution, vigor and condition? Dairy conformation? Style and general appearance?

Breeds of Dairy Cattle

1. Give the origin, history and general characteristics of Holsteins, Jerseys, Guernseys, Aryshires, Brown Swiss.

Records and Record Keeping

1. What records should club members keep?
2. Describe a method of keeping production and feed cost records.

Production of Clean Milk

1. Why is it important to produce clean milk?
2. What are the essentials in producing clean milk?